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1904/05

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PROSPECTUS OF
THE COLLEGE OF AGRICULTURE
OF
CORNELL UNIVERSITY

1904—1905

ITHACA, NEW YORK
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CALENDAR OF CORNELL UNIVERSITY AND THE COLLEGE OF AGRICULTURE.

Regular Session.

1904–5.

First Term.

Sept. 20, Tuesday, University Entrance examinations begin.
Sept. 27, Tuesday, ACADEMIC YEAR BEGINS. Matriculation of new students. University scholarship examinations begin.
Sept. 28, Wednesday, MATRICULATION of new students.
Special students, old or new, must first present themselves at the office of the Director, Morrill 17.
Sept. 29, Thursday, REGISTRATION of Matriculated students.
Sept. 30, Friday, INSTRUCTION BEGINS in all the departments of the University at Ithaca. President's annual address to the students at 12:00 M.
Nov. 24, Thursday, THANKSGIVING DAY.
Dec. 23, Friday, Instruction ends.
Jan. 3, Tuesday, Work resumed.
Jan. 5, Thursday, Registration for the Winter-courses. For the dairy students at the Dairy Building; for others, basement north entrance, Morrill Hall.
Jan. 11, Wednesday, FOUNDER'S DAY.
Feb. 3, Friday, First term closes.

Second Term.

Feb. 6, Monday, REGISTRATION for second term.
Feb. 22, Wednesday, WASHINGTON'S BIRTHDAY.
March 22, Wednesday, close of Short Winter-courses.
March 24, Friday, Easter Recess begins.
Apr. 4, Tuesday, Work resumed.
Apr. 15, Saturday, Latest date for receiving applications for Fellowships.
May 1, Monday, Latest date for presenting theses for advanced degrees.
May 30, Tuesday, DECORATION DAY.
June 15, Thursday, Instruction ends.
June 16, Friday, Entrance Examinations begin.
June 18, Sunday, Baccalaureate sermon.
June 20, Tuesday, Class Day.
June 21, Wednesday, Alumni Day and Annual Meeting of the Trustees.
June 22, Thursday, THIRTY-SEVENTH ANNUAL COMMENCEMENT.

Regular Session.

1905–6.

First Term.

Sept. 19, Tuesday, Entrance examinations begin.
Sept. 26, Tuesday, ACADEMIC YEAR BEGINS. MATRICULATION of new students.
University Scholarship examinations begin.
Sept. 27, Wednesday, MATRICULATION of new students.
Special students, old or new, must first present themselves at the office of the Director, Morrill 17.
Sept. 28, Thursday, REGISTRATION of matriculated students.
Sept. 29, Friday, INSTRUCTION BEGINS in all departments of the University at Ithaca. President's annual address to the students at 12:00 M.

STAFF OF THE COLLEGE OF AGRICULTURE.

FACULTY.

JACOB GOULD SCHURMAN, A.M., D.Sc., LL.D., President of the University.

LIBERTY HYDE BAILEY, M.S., Director of the College of Agriculture, Dean of the Faculty, and Professor of Rural Economy.

GEORGE CHAPMAN CALDWELL, B.S., Ph.D., Professor of Chemistry, Emeritus.

ISAAC PHILLIPS ROBERTS, M.Agr., Professor of Agriculture, Emeritus.

JOHN HENRY COMSTOCK, B.S., Professor of Entomology and General Invertebrate Zoölogy.

HENRY HIRAM WING, M.S. in Agr., Professor of Animal Husbandry.

JOHN CRAIG, M.S. in Agr., Professor of Horticulture.

THOMAS FORSYTH HUNT, M.S., D.Agr., Professor of Agronomy and Manager of the University Farms.

RAYMOND ALLEN PEARSON, M.S., in Agr., Professor of Dairy Industry.

JAY ALLAN BONSTEEL, Ph.D., Professor of Soil Investigation (detailed from Bureau of Soils, United States Department of Agriculture).

MARK VERNON SLINGERLAND, B.S. in Agr., Assistant Professor of Economic Entomology.

GEORGE WALTER CAVANAUGH, B.S., Assistant Professor of Chemistry in its Relations with Agriculture.

JOHN LEMUEL STONE, B.Agr., Assistant Professor of Agronomy.

STEVENSON WHITCOMB FLETCHER, Ph.D., Assistant Professor of Extension Teaching in Agriculture.

JAMES EDWARD RICE, B.S. in Agr., Assistant Professor of Poultry Husbandry.

GEORGE NIEMAN LAUMAN, B.S.A., Instructor in Rural Economy and Secretary to the Faculty of the College of Agriculture.

ALEXANDER DYER MacGILLIVRAY, Ph.D., Instructor in Entomology.

WILLIAM ALBERT RILEY, Ph.D., Instructor in Entomology.

JOHN WASHINGTON GILMORE, B.S.A., Instructor in Agronomy and Superintendent of the Farms.

ROBERT S. NORTHROP, B.S., Instructor in Horticulture.

OTHER OFFICERS OF INSTRUCTION AND ADMINISTRATION.

HUGH CHARLES TROY, B.S. in Agr., Assistant in Dairy Laboratory.

WALTER WAGER HALL, Assistant in Cheese-Making.

WEBSTER EVERETT GRIFFITH, Assistant in Butter-Making.

JOHN WALTON SPENCER, Supervisor in Extension Department.
ANNA BOTSFORD COMSTOCK, B.S., Lecturer in Nature-Study.
ALICE GERTRUDE McCLOSKEY, Assistant in Extension Department.
MARTHA VAN RENSSELAER, Supervisor Farmers' Wives' Reading-Course.
HERBERT HICE WHETZEL, A.B., Assistant in Plant Pathology in the Extension Department.
SAMUEL FRASER, Assistant Agronomist.
JAMES ADRIAN BIZZELL, PH.D., Assistant Chemist to the Experiment Station.
JOHN MAIN TRUEMAN, B.S. in Agr., Assistant in Animal Husbandry and Dairy Industry.
WARREN H. MANNING, Lecturer in Outdoor Art.
BRYANT FLEMING, B.S.A., Lecturer in Outdoor Art.
G. ARTHUR BELL, A. F. A. SCHOLTZHAUER, W. F. BURLINGAME, Assistants in Winter Dairy-School for 1904.
GEORGE WALTER TAILBY, Farm Foreman.
CHARLES EDWARD HUNN, Gardener.

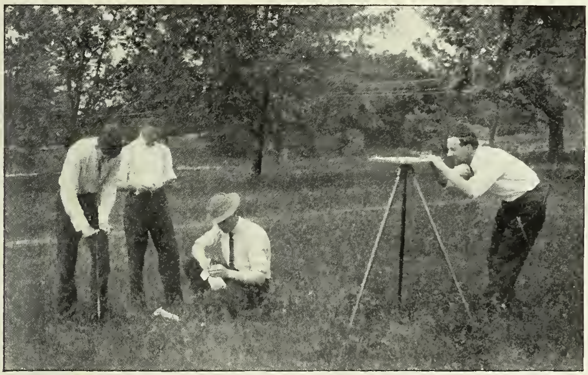
CLARENCE AUGUSTINE MARTIN, Assistant Professor of Architecture (giving instruction in Farm Home Course).
HENRY NEELY OGDEN, C.E., Assistant Professor of Civil Engineering (giving instruction in Farm Home Course).
ROBERT G. ALLEN, Section Director Weather Bureau (giving instruction in Agricultural Meteorology).

THE AGRICULTURAL COLLEGE AND STATION COUNCIL.

JACOB GOULD SCHURMAN, President of the University.
FRANKLIN C. CORNELL, Trustee of the University.
LIBERTY H. BAILEY, Director of the College.
EMMONS L. WILLIAMS, Treasurer of the University.
JOHN H. COMSTOCK, Professor of Entomology.
THOMAS F. HUNT, Professor of Agronomy.

Other officers of instruction in the several faculties of the University give instruction in the fundamental branches preparatory to the agricultural electives.

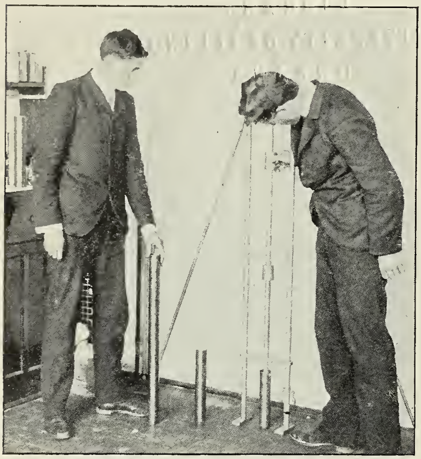
The College of Agriculture is one of ten co-ordinate colleges and departments, comprising Cornell University. It has its own staff and equipment and devises its own courses of study. The aim of the College of Agriculture is to elevate the ideals of country living. This it attempts to do in three general ways: by giving instruction to those who come to the University for two years or more; by giving instruction by means of correspondence and other extension methods to those persons, young or old, who cannot come to the University or who can come but for a very limited time; by experimenting for the discovery of new truth in agricultural fields.



Soils work in the field.

The College of Agriculture is founded on the Land Grant Act of 1862, whereby Congress appropriated the proceeds of the sales of certain lands to the maintenance of a college in each State to give instruction in agriculture and the mechanic arts. This grant marks an epoch in the history of education, because it provides for a system of education that has direct and definite relations with the daily work of persons who must earn their living in the arts and industries.

The College of Agriculture, therefore, seeks to interest the farm boy and the farm girl in the very things with which they live day by day,—the soil, the weather, the plant, the animal, the farm home, the school and all the customary rural affairs. It seeks both to give them power to make the most of the farm, and to inspire contentment with the daily life.



Work in soil physics.

The College is provided with land, stock, orchards, gardens, libraries and other equipments. The land is distributed in three contiguous areas, comprising altogether about 250 acres. The buildings comprise a dairy, two barns, poultry quarters and forcing-houses. There are herds of cattle, sheep and swine, flocks of poultry, various farm horses. In the horticultural department is a collection of fruit trees in orchards, and many kinds of specimen plants. Farm machinery and implements are also represented. The library facilities are ample, comprising a very large collection of rural books in the general university library, a practically complete series of Experiment Station publications in the Director's office, and small reference libraries in the Dairy Building and in the rooms of the Horticulturists' Lazy-Club.

Students entering the College of Agriculture are on an equal footing with students in any other college or department. They become a part of the general student body. They are under the special supervision of the Director of the College. Three special societies or clubs are organized and maintained by the students in the College of Agriculture,—the Agricultural Association meeting every other Tuesday night, the Horticulturists' Lazy-Club, meeting every Monday night and the Jugatæ, an entomological club. In addition to these, the winter-course students maintain two organizations of their own. Every alternate Tuesday evening, the Director meets the students in the "Agricultural Assembly." Recently there has been organized an "Agricultural Experimenter's League," to which all students are eligible, and which is designed for the furthering of experimental investigation and of arousing closer friendship amongst the farmers of the state. The students in the College of Agriculture publish a monthly magazine, "The Cornell Countryman."

Ithaca is situated at the head of Cayuga lake, near the center of New York state. It is a city of between 13000 and 14000 inhabitants. It is reached by the Lehigh Valley and Delaware, Lackawanna and Western railroads, and in summer by steamer on Cayuga Lake.

The region is a most beautiful and healthful one. The surface is exceedingly diversified. The University stands on a plateau about 400 feet above the lake. The country abounds in hills, gorges, waterfalls, marshes, forests and farms, supporting interesting and varied flora and fauna.

Some of the details of the permanent equipment are as follows:

1. *Agronomy and Animal Husbandry.*—A four-story barn provides for housing the animals, machinery, tools, hay, grain and manures. The stationary thresher, feed-cutter, chaffer and other machinery are driven by steam power. The barn also furnishes many facilities for carrying on investigations in feeding and rearing all classes of domestic animals. The barn is also furnished with a piggery and tool house. Not far from the main barn have been constructed several buildings, with suitable yards and appliances for incubating eggs and rearing domestic fowls, and also a comfortable heated building in which the judging of stock is done. There are also buildings on the remoter parts of the farm. The College also has a good equipment of apparatus for soil physics work.

The agricultural rooms are provided with a collection of grains and grasses, implements of horse and hand culture, and various appliances for carrying on instruction and conducting investigation.

2. *Dairy Industry.*—The dairy building, a two-story stone struct-

ure 45x90 feet, was built and equipped from an appropriation of $50,000 by the Legislature of 1893. It contains lecture rooms, laboratories, and offices, besides two large rooms for butter and cheese making, both of which are equipped with modern machinery and appliances. Automatic electrical apparatus controls the temperature in the cheese-curing rooms. Refrigerator room, lockers and bath rooms are also provided. The whole building is thoroughly heated and ventilated. Power is furnished by a sixty horse-power boiler and a twenty-five horse-power Westinghouse engine.

Students building brooder houses

3. *Horticultural Department.*—The equipment comprises about ten acres of land variously planted, forcing-houses and a barn.

The gardens and orchards contain the fruits which thrive in the north in considerable variety, and in sufficient quantity to illustrate methods of cultivation. Nursery grounds are also attached, in which are growing many species of economic plants. The fruits comprise varieties of grapes, apples, plums, and other kinds. A dwarf pear orchard of 300 trees, and other orchards, comprise the remainder of the field space, excepting such as is set aside for vegetable gardening and floriculture.

The forcing-houses are five in number and cover nearly 6,000 square feet of ground. These, in connection with store-rooms and pits, afford opportunities for nursery practice, for the study of the forcing of vegetables and for some kinds of floriculture. A laboratory with space for forty students, is used for instruction in propagation of plants, pollination, and the commoner greenhouse operations. There is also a mushroom house 14x80 feet and a reading room for horticultural students.

The museum comprises two main features—the garden herbarium and the collection of photographs. The herbarium, containing at present over 12,000 sheets, is designed to comprise varieties of all cultivated species of plants, and it is an indispensable aid to the study of garden botany and the variation of plants. The collection of photographs comprises over 6,000 negatives with prints representing fruits, flowers, vegetables, illustrative landscapes, glass houses, and horticultural operations. A collection of machinery and devices for the spraying of plants is at the disposal of students. Charts and specimens in considerable variety complete the museum and collection.

The University library has files of many of the important horticultural and botanical periodicals and a good collection of general horticultural literature.

4. *Entomological Department.*—The entomological cabinet contains, in addition to many exotic insects, specimens of a large part of the more common species of the United States. These have been determined by specialists, and are accessible for comparison. The collection includes many sets of specimens illustrative of the metamorphoses and habits of insects. The laboratory is also supplied with a large collection of duplicates for the use of students and is equipped with microscopes and other apparatus necessary for practical work in entomology.

The insectary of the Agricultural Experiment Station affords facilities to a limited number of advanced students for special investigations in the study of the life history of insects, and for experiments in applied entomology.

5. *Chemical Department.*—This Department is housed in a three-story brick building 126 feet in length and of an average width of 60 feet. The Department is liberally equipped with varied appliances necessary to give instruction to several hundred students in General and Agricultural Chemistry.

6. *The Agricultural Library* contains files of bulletins and reports from the experiment stations of the United States and Canada ; it has also a file of the publications of the U. S. Department of Agriculture. The leading works on agriculture are on the shelves. The exchange list includes the principal agricultural periodicals published in this country.

Class in poultry husbandry.

By act of the Legislature, approved by the Governor May 9, 1904, an appropriation was made of $250,000 for the erecting and equipping of buildings for the College of Agriculture. The act also establishes the College as "The New York State College of Agriculture at Cornell University." The plans for the buildings and for the reorganization of the College are not ready for announcement at this time.

The College of Agriculture comprises three more or less distinct general divisions: 1. Regular teaching work; 2. Extension work; 3. Experiment Station.

I. THE COURSES OF INSTRUCTION.

The regular instructional work of the College of Agriculture falls into two courses,—the full or four years' course leading to the degree of Bachelor of the Science of Agriculture (B.S.A.); and the special or two years' course in which, on the completion of thirty University hours a certificate is given. In addition to these courses, students may pursue agricultural subjects in the Graduate Department of the University, leading to the degrees of Master of Science in Agriculture (M.S.A.) and Doctor of Philosophy (Ph.D.).

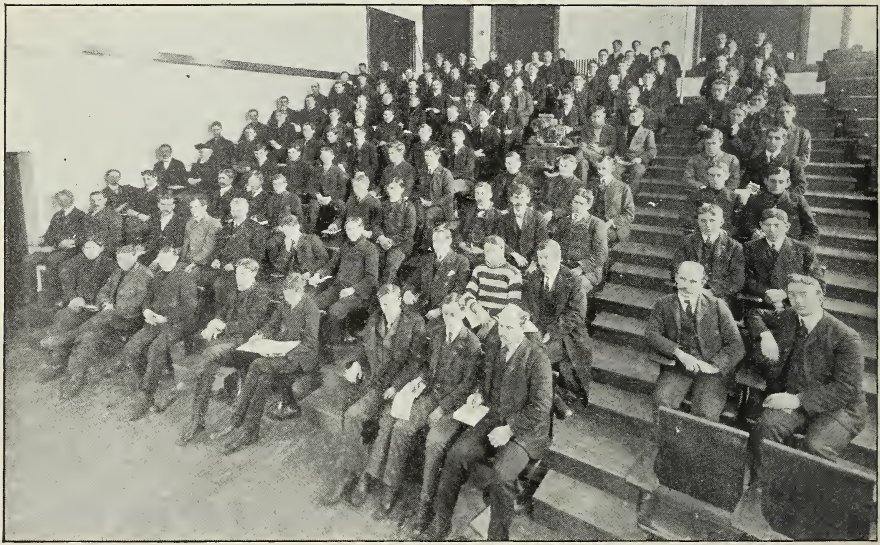
A. The Regular or Four Years' Course.

Certain conditions are imposed on the student who would enter the University. Men must be at least sixteen years of age and women seventeen years. Certain preliminary subjects must have been compassed. There are two tests of proficiency in these subjects,—the student may pass an examination on them, or he may present an acceptable certificate showing that he has passed them elsewhere. The details of entrance are fully explained in the rules at the end of this circular.

The amount of work that a student performs is expressed in "hours." An " hour " represents the amount of time that the student spends in recitation-work or laboratory-work in any subject. It is the unit of computation when the credits are reckoned. A recitation-hour occupies an actual hour of time, as from ten to eleven o'clock. The forenoons, from eight till one o'clock, are mostly given over to recitations. A laboratory-hour, however, occupies two and one-half hours of actual time, as from two to four-thirty o'clock. The afternoons are given over to laboratory work in fields, greenhouses, draughting rooms, dairy, chemical building and the like. The normal amount of work is 15 hours per week. Only by special permission of the faculty can a student take less than this or more than 18 hours. For example, a student might have the following work :

	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.	Total hours.
Chemistry,	10–11		10–11		10–11	9–10	4
Botany,		10–11		10–11			2
Physics,	9–10		9–10		9–10		3
Economics,	8– 9		8– 9		8– 9		3
Drawing,		2–4:30		2–4:30			2
Drill,	4:45–5:45		4:45–5:45		4:45–5:45		2
Total hours per week,							16

The student " registers " at the beginning of each university year. That is, he lays out all his subjects, with the days and hours, for the entire year. For all elective work, his schedule must be approved by the Director. The university year is divided into two terms or half-years. The amount of work for the half-year is computed in hours per week. That is, the student, in any half-year may take 15, 16, 17 or 18 hours per week. The following half-year he may take any one of these four amounts. At the end of the year he has to his



Winter-Course students, 1904, taking lectures.

credit the sum of these hours, as 16+17=33 hours. Before he can graduate, he must have a total credit of 120 hours not including drill and gymnasium, which is an average of 15 hours for 8 half years.

The four years' course comprises, first, the pursuit of certain fundamental subjects that are calculated to give the student a firm and broad foundation upon which to build his special work ; second, specific training in those subjects that are intimately associated with rural affairs. The fundamental subjects are pursued largely in the College of Arts and Sciences, and they cover approximately the first half of the course. The remainder of the course is taken directly with the professors in the College of Agriculture, although from the very first the student is under the immediate direction of the faculty of the College of Agriculture and his work is shaped with particular reference to agricultural affairs.

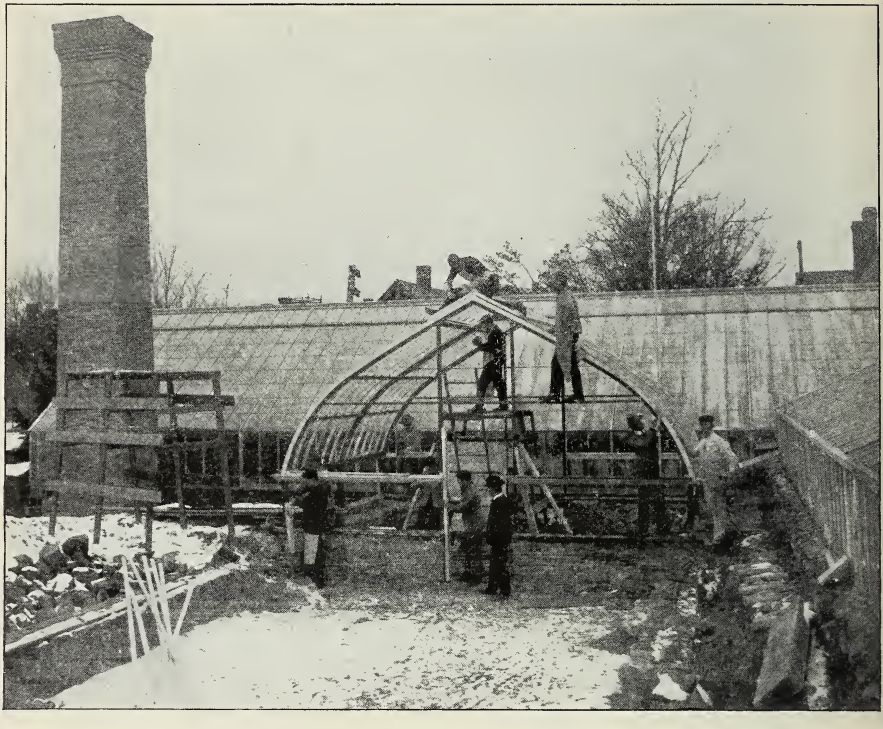
The fundamental work comprises studies in the following subjects : English, drawing, geology, physics, chemistry, soils, animal physiology and pathology, plant physiology and pathology, biological laboratory drill, economics. These subjects are "required ;" that is, they must be taken before the student is allowed to pursue the special work in the last two years of his course. Aside from these subjects, a certain amount of military drill and gymnasium work is required.

Most of the work of the last two years is "elective ;" that is, the student may choose which subjects he shall take. He is at liberty to choose half the elective work of his last two years outside the College of Agriculture.

Aside from the regular work provided by the College of Agriculture, there are lectures by non-residents who are expert in various specialties, on the general subject, "Problems in Agriculture," and twice each month the Director meets all the students in the College for discussion of timely topics.

B. Special Two-Year Courses.

Two Special Courses have been arranged for the benefit of those who are unable to take the full four years' course. Students must be at least eighteen years of age to enter the Special Courses. They are entered by the Director of the College of Agriculture without examination. They must satisfy the Director that they are well enough grounded in the secondary school subjects to enable them to pursue the work with credit to themselves and with honor to the University, and also that they desire to take the work because of direct interest in agricultural affairs. They must present an honorable dismissal from the school last attended and certificates of good moral character. When they come from secondary schools in which they have not completed the course, they must present a letter of recommendation from the principal in regard to their taking the Special Course in Agriculture. Special students are obliged to choose two-



Students building a greenhouse.

thirds of their work in each term from the ‘‘ agricultural electives.’’ The Special Courses are as follows :

1. The General Agriculture Special Course.—This is not a definite ‘‘ course ’’ in the sense of having a prescribed set of studies. The student chooses any of the ‘‘ agricultural electives ’’ that he may be able to pursue. The Director of the College of Agriculture admits the student as a Special ; but this does not admit him to classes. He is admitted to the various classes by the heads of the departments when he has satisfied the heads of the departments that he is able to pursue the work. The Agricultural Special Course is designed particularly to meet the needs of young men and young women from the farm who desire to fit themselves for farm life but who have not had the school advantages to enable them to prepare for regular university entrance or who have not the time to give to a four years’ course.

2. Nature-Study Special Course.—This course is open to teachers, or to such students in the University as signify their intention to teach, who desire to prepare themselves in nature-study and country-life subjects. In this course the work is largely prescribed. The course comprises two categories of work : the subject-matter studies, and the pedagogical practice. The subject-matter is to be secured in the regular classes of the University, largely in the biological departments. The pedagogical practice is to be had with children in regular nature-study classes and clubs in the public schools of Ithaca and in school-garden work with children. The details of the course are given on page 29.

II. EXTENSION WORK.

The extension work of the College of Agriculture is designed to help persons directly on their farms, and to aid those who desire definite instruction but cannot take a long or regular course in agriculture in the University. It supplements the teaching and experimenting of the College of Agriculture. It is maintained by funds appropriated by the State. It is professedly a popular work. It endeavors to reach the common problems of the people, to quicken the agricultural occupations, and to inspire a greater interest in country life. It is also a bureau of publicity, whereby there is an exchange of all important matters connected with the progress of the agriculture of the State. This Extension enterprise is conducted under the general supervision of the State Commissioner of Agriculture.

The Extension department comprises many efforts, the leading ones being:

(a) Experimenting and testing about the State and at Ithaca, for the purpose, primarily, of aiding the farmer in handling his own problems.

Laboratory in agronomy.

(b) The Farmers' Reading-Course; the Farmers' Wives' Reading-Course.

(c) The Nature-Study work, comprising the junior gardeners, junior naturalists, work in connection with county and local fairs, improvement of school premises, home nature-study course, lectures and demonstrations in schools and at teachers' meetings.

(d) Coöperation with schools in introducing agricultural and country life topics.

(e) Winter-courses of eleven weeks at Cornell University in General Agriculture, Poultry Husbandry, Dairy Industry.

Several reports of the Extension work have been published as bulletins. These may be had on application until the supply is exhausted. Applications to join any of these extension enterprises may be made to the Director of the College of Agriculture.

III. AGRICULTURAL EXPERIMENT STATION.

The Agricultural Experiment Station of Cornell University is a Department of the College of Agriculture. Incidentally, students may acquire instruction from observing and discussing the experiments which are being conducted. The federal law passed March 2, 1887, briefly outlines the objects of the experiment stations in the following words : " To aid in acquiring and diffusing among the people of the United States useful and practical information on subjects connected with agriculture, and to promote scientific investigation and experiment respecting the principles and applications of agricultural science." . . . It further provides " That bulletins or reports of progress shall be published at said station at least once in three months, one copy of which shall be sent to each newspaper in the states or territories in which they are respectively located, and to such individuals actually engaged in farming as may request the same and as far as the means of the station will permit." The entire plant of the College of Agriculture is used, as occasion demands, for conducting experiments in animal and plant growth and reproduction, and in applied, comparative and scientific research and investigations. The Cornell University Agricultural Experiment Station was first organized in 1879. It was reorganized in 1888, after the passage of the federal law.

The publications of the Agricultural Experiment Station include to date sixteen annual reports and two hundred and twenty bulletins. These publications are distributed free to such residents of the State as apply for them so far as the means of the station will permit.

COURSES OF INSTRUCTION.

The Regular Four-Year Course in Agriculture Leading to the Degree of Bachelor of the Science of Agriculture.

The work is prescribed and elective. The prescribed work is as follows:

Freshman Year.	No. Course.	Hours. 1st Term.	Hours. 2d Term.
English	1	3	3
Drawing	D 1	2	2
Botany	1, 2	3	3
Geology	2	3	3
Invertebrate Zoology	1	2	
Entomology	3	7	3
Vertebrate Zoology	2	2	

In addition to the above, the required drill credit, 2 hours each term, and gymnasium credit, 1 hour each day, must be taken.

Sophomore Year.	No. Course.	Hours. 1st Term.	Hours. 2d Term.
English	2	3	3
Physics	2a	2	2
Chemistry	1, 81	6	6
Physiology of Domestic Animals	21		3
Soils	1	3	

Junior Year.	No. Course.	Hours. 1st Term.	Hours. 2d Term.
Political Economy	51	3	3
Agronomy	11, 12	4	4

The elective work may be chosen from the courses described on the following pages. At least one-half of the entire elective work of each year must be chosen from these agricultural subjects.

Special students (admitted without examination, by the Director of the College of Agriculture) follow no prescribed course; but at least two-thirds of all their work must be in the agricultural subjects described on the following pages. They are obliged to follow the same regulations as the regular students in not entering any particular work until they have satisfied all previous requirements for that work.

Courses in Other Colleges Allowed as Agricultural Electives.

Botany, 6 (Exotics); New York State Veterinary College, 51 and 52 (Contagious Diseases, Parasites); Geology, 32 (Origin and Nature of Soils).

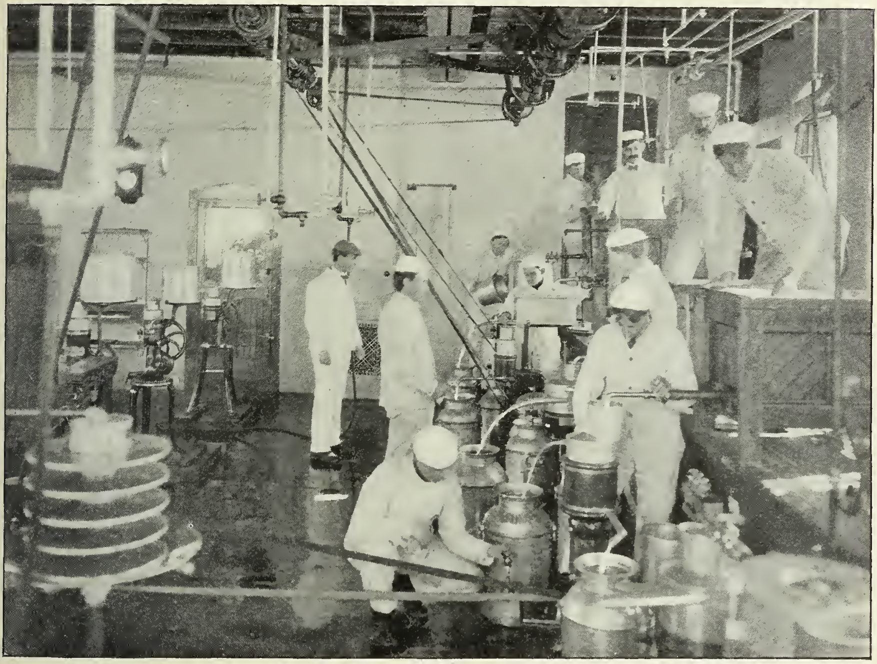
THESIS.

The student may elect a thesis with the heads of any of the departments in the College of Agriculture. The thesis work must continue for at least one year. It counts a credit of two hours for each term.

A. Entomology and General Invertebrate Zoology.

1 **Invertebrate Zoology.** General course. First half of the first half-year. Credit, 2 hours. M., W., F., 10, *White 12.* Professor Comstock; and one practical exercise by the class in sections. 1st section, W., 2–4:30; 2d section, F., 2–4:30, *White 20.* Messrs. MacGillivray, Riley and Betten.

This course is followed by course 2 in Vertebrate Zoology, which occupies the corresponding hours in the last half of the first half-year.



Butter-making laboratory.

2 **Morphology of Invertebrates.** Special laboratory course. M., 8–5, Th., 8–1, *White 20.* Mr. MacGillivray.

3 **General Entomology.** Lectures on the characteristics of the orders, sub-orders, and the more important families and on the habits of representative species. Second half-year. Credit, 2 hours or 3 hours. M., W., 10, *White 12.* Professor Comstock; and one practical exercise in sections for those who have not had courses 4 and 5. W., F., 2–4:30, *White 20.* Messrs. MacGillivray, Riley and Betten.

Course 3 is open only to students who have taken course 1.

4 **Elementary Morphology of Insects.** Laboratory work. First half-year. Credit, 3 hours. M., T., 8–5, W., Th., F., 8–1, *White 20.* Messrs. MacGillivray and Riley.

5 **Elementary Systematic Entomology.** Laboratory work. Credit, 2 hours. M., T., 8–5, W., Th., F., 8–1, *White 20.* Messrs. MacGillivray and Riley.

Course 5 is open only to students who have taken course 4, and are taking or have taken course 3.

6 **Advanced Systematic Entomology.** Laboratory work. Credit, 3 hours. M., T., 8–5, W., Th., F., 8–1, *White 20.* Messrs. MacGillivray and Riley.

7 **Histology of Insects.** Laboratory work. Introductory course. T., 8–5; W., F., 8-1. Mr. Riley.

Course 7 is open only to students who have taken courses 4 and 5.

8 **Economic Entomology.** Lectures and field work. Discussion of the more important insect pests and of the methods of combating them. At opportune times, the class will be taken into the field in sections to observe insect pests at work. Second half-year. Credit, 2 hours. T., Th., 10, *White 12.* Assistant Professor Slingerland.

9 **Advanced Economic Entomology.** Lectures, seminary and field work. Economic problems connected with applied entomology discussed, reported upon, and field observations made. Experimental methods in breeding, photographing, investigating and combating insects discussed and studied. Second half-year. Credit, 1 hour. One afternoon a week by appointment. *Insectary.* Assistant Professor Slingerland.

Course 9 is designed for advanced students who desire to fit themselves for Experiment Station work. The course is open only to students who have taken courses 1, 3, 4, 5, and 8.

10 **Classification of the Coccidæ.** A course designed to familiarize the student with the more injurious species of scale insects, the method of preparing specimens for study, and the systematic arrangement of the species. Lectures and laboratory work. Second half-year, at hours to be arranged. *White 20.* Credit, 2 hours. Mr. MacGillivray.

Course 10 is open only to students who have had courses 4 and 5.

11 **Morphology and Classification of the Arachnida.** Special laboratory course. M., T., 8-5; W., Th., F., 8–1, *White 20*, Professor Comstock and Messrs. MacGillivray and Riley.

12 **Morphology and Development of Insects.** Lectures and demonstrations. Second half-year. F., 10, *White 12.* Credit, 1 hour. Professor Comstock and Mr. Riley.

Course 12 is open only to students who have taken courses 1, 3, 4, and 5. Students are advised to take course 7 also before taking this course.

13 **Research in Entomology.** Advanced laboratory course, special work arranged with reference to the needs and attainments of each student. M., T.,

8–5; W., Th., F., 8–1, *White 20.* Professor COMSTOCK and Messrs. MACGILLIVRAY and RILEY.

14 **Seminary.** The work of an entomological seminary is carried on by the *Jugatæ*, an entomological club which meets for the discussion of current literature, and of the results of investigations. Attendance at the meetings may be counted as laboratory work. M., 4–5, *White 12.*

Summer Term.

After 1904 the summer term in Entomology will be discontinued as a distinct term; but courses in Entomology will be offered in the Summer Session.

B. Agricultural Chemistry.

81 **Agricultural Chemistry.** General course. Second half-year. Six hours. Three lectures, M., W., F., 11, *Morse Hall, Lecture Room No. 3.* Two laboratory periods and one recitation. Assistant Professor CAVANAUGH.

This course treats of the fertility of the land, and deals with such subjects as the composition of plants, the sources of their food, the chemical and physical properties of soils, and the composition and behavior of fertilizers and manures.

This course is open only to those who have had Chemistry course 1.

82 **Agricultural Chemistry.** Advanced course. Lectures, two hours. First half-year, Th., S., 9, *Morse Hall, Lecture Room No. 2.* Assistant Professor CAVANAUGH.

83 **Agricultural Analysis.** Laboratory practice. Hours by appointment. First half-year. Foods and feeding stuffs, sugar beets and sugar house products, and dairy products. *Morse Hall.* Assistant Professor CAVANAUGH.

Open only to those who have had Chemistry courses 1 and 6.

84 **Agricultural Analysis.** Laboratory practice. Hours by appointment. Second half-year. Soils, fertilizers, insecticides and fungicides. *Morse Hall.* Assistant Professor CAVANAUGH.

This course is open only to those who have had courses 1 and 6.

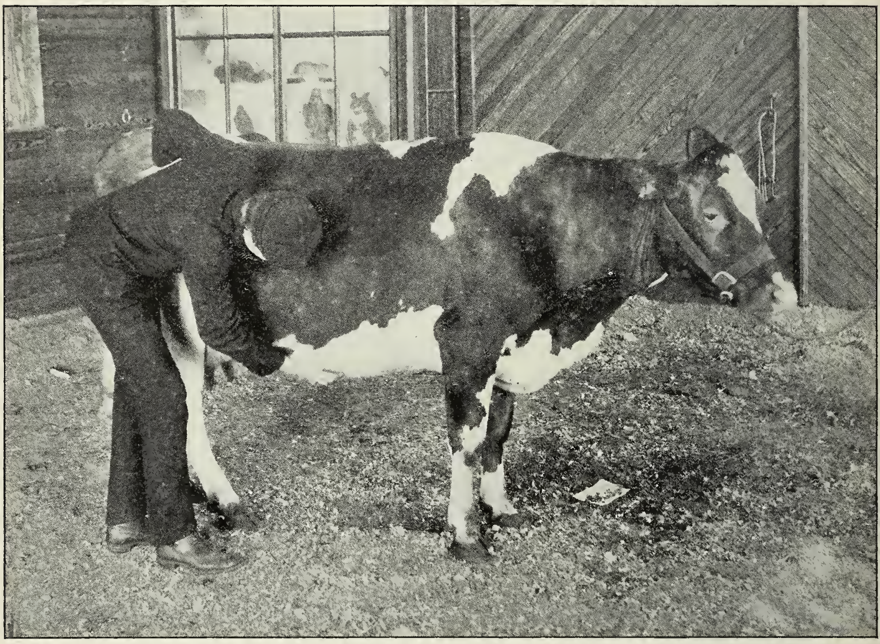
85 **Dairy Chemistry.** First half-year. Lectures. Two hours. W., F., 10. *Morse Hall, Lecture Room No. 3.* Laboratory practice in Dairy Chemistry is given in course 83. Assistant Professor CAVANAUGH.

C. Soils.

1 **Agricultural Soils.** An elementary course covering the nature, origin and classification of soils. Based on Rocks, Rock Weathering and Soils, G. P. Merrill; The Soil, F. H. King; and Reports and Bulletins of the Bureau of Soils, U. S. Department of Agriculture. Two hours lectures, 1 hour laboratory per week during first semester. The laboratory work will include field excursions for inspection of soils in the vicinity of Ithaca, N. Y., T., Th., 10, S., 10–12:30. *Morse Hall, Lecture Room No. 2.* Professor BONSTEEL.

2 **Soils of the United States.** An introductory study of the chief soil provinces, soil series and soil areas of the United States, with special reference to soils of New York State. Intended as a basis for advanced work in the study of adaptation of crop to soil and of intensive farming. Two hours lectures during second semester. T., Th., 10. *Morse Hall, Lecture Room No. 2.* Professor BONSTEEL.

3 **Soil Mapping.** The preparation of large scale soil charts of portions of the University farm. A plane table survey of the plats will be prepared as a base map upon which the different soils are to be mapped. In addition a small area will be mapped on the scale of 1 in. = 1 mi. by the Bureau of Soils field methods. Must be preceded by course 1. One hour a week after Easter recess, by appointment (at least 30 hours actual field work will be required). *Morse Hall.* Professor BONSTEEL.



Studying a dairy cow.

4 **Soil Seminary.** A study of American soil literature with preparation of reports on selected subjects, such as acid soils, worn out and abandoned lands,

CORNELL UNIVERSITY—COLLEGE OF AGRICULTURE.

GENERAL WINTER-COURSE IN AGRICULTURE.

APPLICATION FOR ADMISSION.

Name of Applicant, ... *Date of Birth* ....

P. O., ... *County,* .... *State,* ....

Name and address of parent or guardian, ...

PREVIOUS SCHOOL TRAINING:

Name of School last attended, ... *No. of terms in attendance,* ....

AMOUNT OF WORK DONE IN COMMON BRANCHES:

....

....

REFERENCE:—I am personally acquainted with the above applicant and believe .... *to be of good moral character, industrious and studious.*

....

Position, ...

Address, ...

Reference should be preferably by your teacher, pastor, or some public officer in the community.
This blank must not be used when it is desired to enroll in the *Reading-Course*. A card for that purpose will be sent on application.

CORNELL UNIVERSITY—COLLEGE OF AGRICULTURE.

SHORT WINTER DAIRY-COURSE.

APPLICATION FOR ADMISSION.

Name of Applicant,..*Date of Birth*..............................

P. O.,..*County,*..............................*State,*..............................

Name and address of parent or guardian,..

PREVIOUS SCHOOL TRAINING:

Name of School last attended,..*No. of terms in attendance,*..............

AMOUNT OF WORK DONE IN COMMON BRANCHES:

....

Do you use tobacco?..............*Give experience if any in factory work,*..............................

REFERENCE:—I am personally acquainted with the above applicant and believe..............*to be of good moral character, industrious and studious.*

....

Position,..

Address,..

References should preferably be your teacher, pastor, or some public officer in the community.
This blank must not be used when it is desired to enroll in the *Reading-Course*. A card for that purpose will be sent on application.

CORNELL UNIVERSITY—COLLEGE OF AGRICULTURE.

SHORT WINTER POULTRY-COURSE.

APPLICATION FOR ADMISSION.

Name of applicant, ... *Date of Birth,* ....

P. O., ... *County,* .... *State,* ....

Name and address of parent or guardian, ...

PREVIOUS SCHOOL TRAINING:

Name of School last attended, ... *No. of terms in attendance,* ....

AMOUNT OF WORK DONE IN COMMON BRANCHES:

....

....

REFERENCE:—I am personally acquainted with the above applicant and believe .... *to be of good moral character, industrious and studious.*

....

Position, ...

Address ....

Reference should be preferably by your teacher, pastor, or some public officer in the community.
This blank must not be used when it is desired to enroll in the *Reading-Course.* A card for that purpose will be sent on application.

swamp and marsh soils, methods of soil investigation, crop producing power (soil fertility), soil classification, etc. Must be preceded by courses 1 and 2 or by courses 1 and 3. *Morse Hall.* Professor BONSTEEL.

5 **Research work in field and laboratory investigation of soils.** Study of special problems by advanced students, as a basis for thesis work. Hours as arranged. Must be preceded by Courses 1 and 2 or by Courses 1 and 3. *Morse Hall.* Professor BONSTEEL.

D. Agronomy.

11 **Field Crops.** Lectures and recitations on the history, production, cultivation and marketing of farm crops. Practice with growing and dried specimens including cereals, grasses, clovers and other forage crops. First half-year. Three lectures per week ; practice one afternoon per week. Four hours. Required of juniors. *Morrill 19 and 20.* M., W., F., 9. Th., 2–4 : 30. Professor HUNT.

This course must be preceded or accompanied by Soils Course 1.

12 **Farm Management.** Lectures and recitations on present agricultural methods in various countries ; cost and relative profit of various farm operations and systems. Second half-year. Three lectures per week ; practice one afternoon per week. Four hours. Required of juniors. *Morrill 19 and 20.* M., W., F., 9. Th., 2–4 : 30. Professor HUNT.

13 **Advanced Agronomy.** Laboratory and research work upon the best methods of crop production, including a detailed study of experimental results with one or more field crops, supplemented with lectures and recitations. First half-year. Practice two afternoons per week. Two hours. *Morrill 20.* M., F., 2–4 : 30. Professor HUNT. This course must be preceded by Course 11 and must be accompanied by Course 15.

14 **Advanced Agronomy.** Laboratory and research work upon the best methods of crop production, including a detailed study of experimental results with one or more field crops, supplemented with lectures and recitations Second half-year. Practice two afternoons per week. Two hours. *Morrill 20.* M., F., 2–4 : 30. Professor HUNT. This course must be preceded by Course 11 and must be accompanied by Course 15.

15 **Seminary Work.** Discussion of research work and reports upon special topics. Required of all students taking graduate work in Agronomy. Required of undergraduate students taking Agronomy 13 and 14. One afternoon per week. One hour. *Morrill 20.* W., 2–4 : 30. Professor HUNT, Mr. GILMORE, and others.

19 **Farm Practice.** An elective course throughout the freshman and sophomore years especially designed for students who are not familiar with ordinary farm methods and practices. One afternoon per week by appointment. One hour. Mr. GILMORE.

E. Horticulture.

Courses 1 and 2 in Botany are prerequisites to courses in Horticulture, except No. 27.

20 **Nursery and Orchard Practice.** Deals with the multiplication and subsequent care of plants, grafting, budding, making cuttings, polination, pruning, spraying, garden tools, etc. Two hours with laboratory. First half-year. Three hours. *Morrill 19.* T., Th., 11, W., or F., 2–4 : 30. Professor CRAIG and Mr. NORTHROP.

The classes in Nursery and Orchard Practice and Pomology (20 and 23) participate in such excursions as may be arranged from time to time through the fruit-growing regions of the State.

Milk-testing in the dairy laboratory.

21 **The Literature of Horticulture and Landscape Gardening.** An examination of the writings of European and American authors, with special reference to the evolution of horticultural methods. Second half-year. One hour. *Morrill 19.* T., Th., 11 for first half of term. Professor CRAIG.

22 **Plant-Breeding,** with special reference to the improvement of orchard fruits. Second half-year. One hour. *Morrill 19.* T., Th., 11. Professor CRAIG. For half term from Easter recess until Commencement.

23 **Practical Pomology.** Lectures, text-book and other class exercises on the cultivation of fruits. Three hours. Second half year. *Morrill 19.* M., W., F., 11. Course 20 a prerequisite. Professor CRAIG.

24 **Systematic Pomology.** Advanced course in classification and systematic study of fruits. Two hours. First half-year. Lectures, M., 10. Laboratory, T., 2–4 : 30 Must be preceded by course 23. Professor CRAIG.

25 **Greenhouse Construction and Management.** Lectures and text-book, with afternoon laboratory at forcing-houses. First half-year. Two hours. *Morrill 19.* W., 8, M. or T., 2–4 : 30. Professor CRAIG and Mr. NORTHROP.

26 **Olericulture.** Lectures and text-book upon the cultivation of vegetables. Second half-year. One hour. *Morrill 19.* S., 11. Mr. NORTHROP.

27 **Handicraft.** Practical work in the forcing-houses and gardens, with familiar talks. One or two hours by appointment. Throughout the year. Limited to 12 students first term, 18 second term. Mr. NORTHROP and Mr. HUNN.

28 **German or French Horticultural Reading.** Open to horticultural students who have had German or French 1 and 2 or the equivalent. Two hours. M., W., 10. *Morrill 19.* Mr. LAUMAN.

29 **Seminary Work for Advanced Students.** One hour. By appointment. Professor CRAIG and Mr. NORTHROP.

30 **Investigation** incident to previous courses. For graduates and advanced students. Hours by appointment. Professor CRAIG.

F. Animal Husbandry.

31 **Animal Husbandry.** The principles of breeding, including the history, development, creation and improvement of the various races and breeds of farm animals; the principles of feeding, care, selection and management of dairy and beef cattle, horses, sheep and swine ; lectures, M., W., F., 12. Practice one hour by appointment. Four hours through the year. *Dairy Building and Judging Pavilion* Professor WING and Mr. TRUEMAN.

32 **Advanced and Seminary Work in Animal Technology.** Lectures, conferences and reports. Tuesday afternoon's one to three hours. Must be preceded by Course 31. The work will be largely individual and will afford opportunity for intimate and close study of the various breeds of improved stock. *Dairy Building.* Professor WING.

33 **Practice in Feeding and Stable Management.** The student will be put in charge of a certain number of animals and will be required to prepare the food and keep records of consumption and production. Must be preceded or accompanied by Course 31. The ability to milk well is required. Daily 7: 30–9. Three hours. *Barns and Stables.* Professor WING.

[34 **Animal Mechanics and Exterior.** Lectures and recitations upon animal mechanics, proportions and the relation of the latter to specific uses. Practice in measuring animals and testing the value of given measurements for given purposes. First half-year. T., Th., S., 9 and M., 2 to 4 : 30. Three lectures or recitations per week. Practice one afternoon per week. Four hours. *Judging Pavilion.* Professor Hunt. Not given in 1904–5.]

36 **Animal Husbandry.** Special course for students in the Veterinary College. The Principles of Breeding and Feeding Animals, with the history of the improved breeds and practicums in compounding rations and stock judging. M., 10, Th., 10–1, F., 10. *Dairy Building.* Professor Wing.

37 **Poultry.** Origin, History and Classification of the domestic breeds of poultry ; breeding, feeding and management ; construction of buildings and laying out of plants ; caponizing, killing, marketing, hatching, brooding, etc. Lectures T., Th., 9. Throughout the year. *Dairy Building.* Assistant Professor Rice.

38 **Poultry Practice.** One or more hours by appointment. Morning, noon and afternoon. This course takes up poultry carpentry, judging, care of fowls, handling incubators and brooders, study of the egg, anatomy of the hen, etc. Must accompany or follow Course 37. *Poultry Yards.* Assistant Professor Rice.

39 **Poultry Seminary.** One or more hours by appointment. Open only for students who have taken 37 and 38. For advanced study and research. *Dairy Building.* Assistant Professor Rice.

G. Dairy Industry.

41 **Milk and Butter.** The character of milk, methods of handling for different commercial purposes, pasteurization, tests for purity, butter making and marketing. Must precede courses 42, 43 and 44. First half year before Christmas. Credit three hours. Lectures and text-book, T., Th., 10. Practice two periods each week by appointment. *Dairy Building.* Professor Pearson and Mr. Trueman.

42 **Cheese.** Cheddar cheese, its manufacture and marketing. Open only to those who have had Course 41. Second half year after Easter. Credit two hours. Lectures and text-book, Th., 10. Practice includes eight exercises of five hours each by appointment. Students expecting to take this course must report to the professor in charge before Easter vacation. Professor Pearson and Mr. Hall.

43 **Market Milk and Milk Inspection.** The production and control of market milk, with special reference to its improvement. Open only to those who have had course 41. Second half year after Easter. Credit two hours. Lectures and text-book W., F., 10. Practice by appointment. *Dairy Building.* Professor Pearson.

44 **Advanced Work in Laboratory and Seminary.** Open only to those who have had Course 41. Hours and credit as arranged. *Dairy Building.* Professor Pearson.

H. Agricultural Engineering and Architecture.

[51 **Field Engineering.** Lectures, recitations and practice in surveying and plotting the farm; roads, fences and water supply, drainage and irrigation. Second half year. Two lectures per week. Practice one afternoon per week. Three hours. T.,Th., 11, T., 2–4:30. *Morrill 20 and South Barn.* Professor HUNT and Mr. GILMORE. Special lectures on roads will be secured. Not given in 1904–5].

52 **Farm Machinery.** Capital invested, construction, cost, life, uses and draft of tillage, seeding, harvesting, threshing, cleaning, grinding machinery vehicles and farm motors. Lectures, recitations, and practicums. Second half-year. Two lectures per week. Practice one afternoon per week. Three hours. T., Th., 11, T., 2–4 : 30. *Morrill 20 and South Barn.* Professor HUNT and Mr. GILMORE.

[56 **Farm Buildings.** Study and designing of farm buildings. Open to juniors, seniors and to others by special permission. W., 2–4 : 30. One hour throughout the year. *Forcing-houses.* Limited to fifteen students. Mr. LAUMAN. Not given in 1904–5.]

I. The Farm Home.

61 **The Homestead.** The externals of a farm home—layout, buildings, landscape gardening, ornamenting, lawn-making, the home garden, water supplies, rural architecture, sanitation. First half-year. Two hours. *Morrill 20.* T., Th., 10. Professors BAILEY, CRAIG, MARTIN, OGDEN and others. (The first part of this course is also given to out-door art students. Course 81.)

62 **Woman's Work and Home Economics.** Social conditions, past and present; shelter, house and clothing; sanitary equipment of the home, decorating and furnishing, household service, food, maintainence, hospitality, health and conservation of strength. First half-year. Two hours. *Morrill 20.* W., F., 10. Miss VANRENSSELAER and others.

63 **Literature and Art for the Farm Home.** A discussion of popular books in all branches of science. Biographies of men prominent in American history and reading from the writers of fiction, which represents truthfully different phases of development in different sections of our country. Also a discussion of periodicals and pictures attractive and suitable for the farm home. Second half-year. Two hours. *Morrill 20.* W., F., 10. Mrs. COMSTOCK.

J. Rural Economy and Sociology.

71 **Elementary Economics of Agriculture.** Lectures, discussions and reports. A study of the interrelations of economics and agriculture. First half-year. M., W., 9. Two hours. *Morrill 19.* Mr. LAUMAN.

72 **Advanced Economics of Agriculture.** A seminary in which will be studied some particular problem. The subject for 1904–5 will be coöperation in agri-

culture. For 1905–6 the subject will be the question of labor in agriculture. Second half-year. Th., 3 : 30–5:30. Two hours. *Morrill 19.* Mr. LAUMAN.

74 **Farm Accounting.** Occasional lectures on the principles of accounting with practice. Second half-year. One hour. F., 9. *Morrill 19.* Mr. LAUMAN.

75 **History of Agriculture.** Lectures and reports. An outline of the development of the principles of agriculture. First half-year. T., Th., 9. Two hours. *Morrill 19.* Mr. LAUMAN.

77 **Rural Sociology.** Lectures. The present social status and problems of the rural community. Second half-year. T., Th., 9. Two hours. *Morrill 19.* Professor BAILEY and Mr. LAUMAN.

K. Outdoor Art.

This is a two-year course, intended to comprise junior and senior years in the College of Agriculture. Before the student enters on the senior year of the Outdoor Art Course he must have had the following subjects :

Architecture 50 (College of Architecture), 1 hour throughout the year.
Pen and colored topography 6 (College of Civil Engineering), 2 hours first or second half-year.
Land Surveying 10 (College of Civil Engineering), 3 hours second half-year.

Before graduating he must also have completed the following subjects :

Dendrology 9, 3 hours throughout the year.
Economic Entomology 8, 2 hours second halt-year.
Nursery and Orchard Practice 20, 3 hours first half-year.
Literature of Horticulture and Landscape Gardening 22, 1 hour second half-year.
Greenhouse Construction and Management 25, 2 hours first half-year.
Handicraft in Horticulture 27, 1–3 hours by arrangement.
The Homestead, 61, 2 hours first half-year.
Farm Mechanics and Engineering 51 ; 3 hours second half-year.

Special outdoor art work for 1904–5 will be as follows :

81 **Theory and Aesthetics of Outdoor Art and Landscape Architecture.** Lectures, text-book and discussion. First half-year. Two hours. T., Th., 10. *Morrill 19.* Professor BAILEY, Messrs. MANNING, FLEMING, and others.

82 **Design in Landscape Architecture.** Work with plans, drafting, planting specifications, etc. One year. Two hours, by appointment. Mr. MANNING, Mr. FLEMING.

83 **Free hand Sketching.** Rendering in pencil, pen and ink, and water color, of outdoor subjects, with particular reference to landscape and plant forms. One year. Two hours by appointment.

[86 **Plant Material of Outdoor Art.** Lectures and other exercises. First half-year. Two hours. Not given in 1904–5.]

[89 **Advanced Outdoor Art.** Advanced problems in outdoor art. For advanced undergraduate and graduate students. Hours and credits as arranged. Throughout the year. Not given in 1904–5.]

L. Two-Year Special Course in Nature-Study.

This course is designed to help persons who expect to teach nature-study and country-life subjects in the public schools. Persons actually engaged in teaching, and also all students in the University who signify their intention to teach, are eligible. A certificate will be given on completion of 60 hours in the courses prescribed below, together with such other work in the College of Agriculture as may be approved by the Director.

(a) SUBJECT-MATTER COURSES.

Botany 1, 2, 3 hours, throughout the year.
Botany 5, 2 hours, second half-year.
Invertebrate Zoology 1, 2 hours, first half of first half-year.
Entomology 3, 3 hours second half-year.
Systematic and Economic Zoology 6, 2 hours, throughout the year.
Geology 1, 3 hours, throughout the year.
Soils 1, 3 hours, first half-year.
Agronomy 11, 4 hours, first half-year.
The Homestead 61, 2 hours, first half-year.
Handicraft in Plant-growing for Nature-Study Students 30a, 1 hour, second half-year.

(b) PRACTICE IN NATURE-STUDY.

91 **Seminary,** to discuss ways and means. One laboratory hour, by appointment, throughout the year. Mrs. COMSTOCK, and others.

92 **Home Nature-Study Work.** Work in training classes in the Ithaca schools, in which students are also to take part. One hour, by appointment, throughout the year. Mrs. COMSTOCK.

93 **Junior Naturalist Work** in the public schools of Ithaca, comprising school-room work, excursions, and other exercises with children. One hour, by appointment, throughout the year. Miss MCCLOSKEY.

94 **Junior Gardener Work,** comprising actual garden-making with children on school grounds and in the University school-gardens. In winter the work will be conducted in the forcing-houses, where plant growing subjects will be taken up in such way as to adapt them to elementary school conditions. One hour, second half-year. Professor BAILEY, and others.

Students are requested to attend Professor DeGarmo's "Philosophy of Education," course 1. Attention is also called to the summer work in Entomology.

M. Miscellaneous Courses.

101 **Lectures in General Agriculture.** First half-year. Three hours. M., W., F., 11. *Morrill 19.* Professor ROBERTS.

102 **Evolution and the Principles of Breeding.** Second half-year. Three hours. M., W., F., 11. *Morrill 19.* Professor BAILEY.

103 **Agricultural Meterology and Climatology.** Second half-year. Three hours. M., W., F., 8–9 or 12–1, as arranged. Lectures and laboratory. Mr. R. G. ALLEN.

104 **German Agricultural Reading.** The object of this course is to familiarize the students with Agricultural German. Two hours. T., Th., 10. *Morrill* Mr. LAUMAN.

THE WINTER-COURSES.

Three Winter-Courses are offered by the College of Agriculture to men and women who desire instruction in agriculture, but who cannot take either a four-years' or a Special Course. As far as possible, it is desired to make these Courses coöperate and correlate with the Reading-Course work. The logical result of the Reading-Course should be a desire for further study in agriculture, and for training in the best methods of farm and dairy management. Persons taking the Winter-Courses have access to all the facilities provided by the College of Agriculture for the long course students. They receive instruction from regular professors and instructors in the College, and from others employed for this purpose. They are admitted without examination, when having satisfied the Director that their previous training in the common school studies has been such as to enable them to pursue the subjects with credit to themselves and to the College. Those who plan to take one of the Winter-Courses are strongly urged to review in English and Arithmetic especially. Winter-Course students are sometimes seriously handicapped in their work by being deficient in these branches. Any one who has graduated from the common schools of the State, or who has an eighth-grade certificate, should be able to do the Winter-Course work satisfactorily. When making application, give a detailed statement of the previous school training; and, if possible, send a certificate or statement from the teacher of the school last attended. It is desired that application be made early, in order that plans for instruction may be completed. The Courses are open to both men and women of seventeen years and upward. The average age of students in the Winter-Course has been about twenty-one years. The Dairy-students have averaged somewhat older. An application blank accompanies this Announcement.

The Winter-Courses are: (A) The General Winter-Course in Agriculture; (B) The Winter Poultry-Course; (C) The Winter Dairy-Course. All of these Courses will begin at 10 A. M., Thursday, Jan. 5th, 1905, when students will be registered, and will continue for eleven weeks, until Wednesday evening, Mar.

22d. Students who leave before the end of the Course forfeit their right to a certificate. When practicable, special examinations may be given at any time to students who are unavoidably absent from a part of their work. The expenses are mostly what the student makes them. Tuition is free to persons residing in New York State. There are certain fees to cover the expenses of materials and breakage, as explained at the end of this Announcement. All fees must be paid within ten days after registration. Aside from the above, the expenses are only those of living, traveling and other personal expenses. Good board and lodging can be secured in Ithaca for from $4 to $6 per week. The cost of books, etc., need not be over $5. The average expense of the Winter-Course to the students who attended last year, including traveling, was $75.

The exact hours and class-rooms for the different Courses will be explained to each student when he arrives at the University.

The agricultural and horticultural clubs, composed of members of the Faculty and students of the College of Agriculture are open to Winter-Course students, who are cordially invited to attend the meetings and take part in the discussions. The Winter-Course students also form organizations of their own for debating subjects of special interest to themselves, and for social intercourse. These clubs have been a very enjoyable feature of the Winter-Course in past years.

In arranging his work, the student should plan to leave one, and preferably two, afternoons of the week free of lectures or practice. He will need this time for special reading or observation along the lines in which he is particularly interested.

Following is a statement of the instruction in the three Winter-Courses :

A. General Winter-Course.

All students in this Course are required to take the following six subjects :

A 1 **Fertility of the Land.**—A study of soils from the chemical and physical point of view, with discussions on fertilizers, manures, and the principles of plant growth. Lectures, 2 hours. Assistant Professor CAVANAUGH and Professor BONSTEEL.

A 2 **Agronomy**. A study of field crops and farm management. As much time as possible is devoted to the culture of special crops ; as corn, potatoes, wheat, oats, pastures, and forage. Lectures and practice, 4 hours. Assistant Professor STONE.

A 3 **Animal Husbandry**. Principles of breeding and feeding animals ; history and development of animals ; the care and management of dairy cattle. Lectures and practice, 3 hours. Professor WING.

A 4 **Horticulture.** Lectures on the principles of fruit growing, and vegetable gardening, with practice in the propagation of plants, pruning, grafting and spraying. Lectures and practice, 3 hours. Assistant Professor FLETCHER.

A 5 **The Farm Home** Farm buildings ; farm sanitation ; planning and caring for the home grounds ; the conveniences and comforts of the home ; reading in the farm home. Lectures, 3 hours. Professor BAILEY, Mrs. COMSTOCK, Miss VANRENSSELAER, Assistant Professor FLETCHER, and others.

A 6 A series of special lectures will be given by various members of the University Faculty, and by prominent men from elsewhere who are authorities on certain lines of agriculture. Students in the General Winter-Course are required to attend these lectures.

In the General Winter-Course there are thus 15 hours of required work. Three hours of elective work may be chosen from the following subjects. No student may take more than 18 hours of work, excepting by special permission of the Faculty, and 17 hours is as much as the average student can expect to carry satisfactorily.

A 7 **Farm Botany**. A study of the principles of plant growth with particular reference to cultivated plants ; the common fungous diseases of crops, and their control. Lectures, 2 hours. Mr. WHETZEL.

A 8 **Economic Entomology**. Lectures on insect pests of farm, orchard and garden, and remedies for them. Lectures, 2 hours. Assistant Professor SLINGERLAND.

A 9 **Farm Dairying**. Butter making ; the care of milk, and milk testing. Those who elect this Course pay an additional fee of $5. Lectures and practice 3 hours. Professor PEARSON.

A 10 **Poultry Husbandry**. A discussion of the domestic breeds of poultry ; hatching and rearing ; the principles of feeding and management. Lectures, two hours. Assistant Professor RICE.

A 11 **Diseases of Farm Animals**. The common ailments of domestic animals, and their remedies. Lectures, one hour. Professor LAW.

A 12 **Farm Mechanics and Machinery**. Dynamometer and other tests of wagons, and other farm implements ; farm vehicles and machinery ; road building. Lectures and practice, one hour. Mr. GILMORE.

B. Winter Poultry-Course.

In view of the rapid development of the poultry industry, and the large number of persons who are interested in this business, the facilities for poultry instruction and experimentation at the College of Agriculture have recently been enlarged and the subject has been given an assistant professorship.

The winter-course in Poultry Husbandry is offered this year for the first time. It is one of a number of special courses with which the College of Agriculture hopes to meet the needs of the young farmers of the State who have chosen a definite line of agriculture for their life work. Instruction in the poultry-course is given both by lectures and by practice, the practice requiring the larger part of the student's time. The work required of all students in this course is as follows :

P 1 **General Poultry Lectures.** A discussion of poultry houses, breeds and breeding; hatching and rearing; feeds and feeding; and other subjects of interest to poultrymen. Special attention is given to the principles of breeding and mating; judging; incubating; feeding for egg and flesh production; dressing; marketing; caponizing; locating, planning and building poultry houses; diseases of poultry and their control; growing crops especially for poultry, etc. Lectures, 4 hours. Assistant Professor RICE.

P 2 **Special Poultry Lectures.** From time to time, special lectures will be given to the winter-course students by experts along certain lines of Poultry Husbandry. Lectures will also be given by other members of the faculty, on subjects bearing indirectly on Poultry Husbandry, as the culture of crops valuable for poultry. Lectures, 2 hours.

P 3 **Poultry Practice.** Class and individual practice in planning and building poultry houses; the management of incubators and brooders; selecting fowls for mating; feeding; dressing, and all the practical details of a successful poultry plant. Each student will be assigned a special flock and will be expected to perform all the daily operations of its care, keeping an accurate account of the individual record of each fowl, cost of keep, gain or loss of weight, temperature of house, etc. He will operate an incubator, giving complete records of results obtained. Excursions to points of interest to poultrymen will be taken by the class occasionally. Three hours. Assistant Professor RICE.

A 5 **The Farm Home.** 3 hours.

There are thus 12 hours, of required work in the winter poultry-course. From the following list of subjects each student may, if it seems desirable, elect 6 hours more. All these elective courses, except the first one, are described under the general winter-course, on the preceding pages. All students are strongly advised not to take more than 16 hours work. The selection of electives should be made after consulation with the professor in charge of the course.

P 4 **Additional Poultry Practice.** For those persons who desire to get all the poultry experience possible in the limited time at their disposal, and especially for those who expect to take charge of a poultry plant immediately. Practice, 3 hours. Assistant Professor RICE.

A 2, **Agronomy.** 4 hours.
A 9, **Farm Dairying.** 3 hours.
A 4, **Horticulture.** 3 hours.
A 1, **Fertility of Land.** 2 hours.
A 3, **Animal Husbandry.** 3 hours.
A 11, **Diseases of Farm Animals.** 1 hour.
A 12, **Farm Mechanics and Machinery.** 1 hour.

Equipment. For instruction in poultry husbandry, there are several poultry houses, having a capacity of five hundred hens and twenty ducks; eleven styles of incubators; various types of brooders; several kinds of bone cutters; various charts and models; stereopticon slides for illustrating lectures; an incubator cellar 30 feet square; a slaughter house and packing room 16 by 20; a judging pavilion 23 by 33; feed room, root cellar and carpenter shop. All the standard poultry papers are on file in the Dairy building, and the poultry library is one of the largest in the country.

The winter-course in poultry is in charge of Assistant Professor Rice to whom correspondence regarding it should be addressed.

C. Winter Dairy-Course.

This course is planned especially for those who expect to make a profession of manufacturing butter or cheese, or handling milk for the market. Persons wishing instruction in "Farm Dairying" should consult the announcement of the General Winter-Course in Agriculture.

A general fee of $15.00 is collected from each student to partially cover the cost of materials used. One-third of this should be paid immediately after application is accepted. The size of the class is limited and places will be reserved only in the order in which these payments are made. The remaining $10.00 may be paid at any time not later than ten davs following the day of registration.

A deposit of $4.00 is required from each student to cover the value of locker key and laboratory apparatus loaned to him. The University withholds as much of this as is necessary to pay for apparatus not returned by the student at the end of the term and a small amount in addition (35 cents in 1904) to cover losses of laboratory materials not accounted for. The balance is refunded to the student.

Necessary books and note books cost from $2.00 to $6.00, the larger amount when the student wishes to own and take away with him all the books he studies.

Every student is required to have at least two white overall suits, such as are worn by painters and costing about $1.50 per suit; and two white caps costing about 15 cents each. These can be purchased in Ithaca.

The average expenses of the dairy-course may be summarized thus:

General fee	$15.00
Laboratory deposit (part returnable)	4.00
Books	5.00
Two white suits and caps	3.25
Room, 11 weeks at $1.50	16.50
Board, 11 weeks at $3.25	35.75
Total (part returnable)	$79.50
For non-residents of the State, add tuition	25.00

Instruction is partly by lectures and recitations, but largely by actual practice in the different kinds of dairy work. The class assembles daily, except Sunday, at 8 A. M. and class-room work continues two hours. The students are then assigned by sections or squads to different kinds of practice for most of the remainder of the day. These assignments are made so that in the course of the term each student will have his fair proportion of work in each department.

Lectures are given in one-hour periods. Frequently they are replaced by examinations and often a part of the hour is occupied by informal discussion of previous lectures or topics previously assigned for study. The subjects of the different lecture-courses and the approximate number of hours given to each are as follows:

D 1 **Milk and its Products.** This course is given from 8 to 9 A. M. daily from Monday to Friday throughout the term. It includes a full discussion of the secretion or formation of milk, its nature and composition, its care and preservation, different processes of handling and manufacturing, the character of dairy products, conditions affecting their quality, methods of marketing, the business side of dairying, dairy mechanics, the construction of dairy buildings and the legal requirements applying to dairy products; special attention is given to dairy bacteriology and dairy sanitation. The lectures are supplemented by references to dairy literature, current periodicals, experiment station publications and books. Five hours. Professor PEARSON and Mr. TRUEMAN.

D 2 **Dairy Chemistry.** Three hours per week, the first three weeks of the term. The elementary principles of chemistry are explained with a view to enable the student to better understand the composition of dairy products and the chemical changes connected with and influencing certain dairy operations. Three hours. Mr. TROY.

D 3 **General Agriculture as allied to dairying.** Three hours per week, the last eight weeks of the term. Under this heading are included several brief courses of lectures upon subjects intimately related to dairy industry, such as farm manures, commercial fertilizers and the improvement of the land by judicious cropping. Assistant Professor STONE and others.

A 3 **Animal Husbandry.** Three hours.

A 11 **Diseases of Farm Animals.** One hour.

The dairy instruction is given in the Dairy Building, erected by the State ten years ago. The equipment and work is briefly as follows:

Testing. The testing laboratory is fitted with all appliances necessary for making the usual quick tests of milk and its products, including lactometers and a variety of Babcock testers. Each student is expected to become familiar with the Babcock method of determining fat, the calculation of total solids and the more simple tests for preservatives and adulterations.

Butter. The creamery contains numerous different styles of the kinds of apparatus found in a well-equipped commercial plant. The milk is received, weighed, sampled and separated, and the entire processes of cream ripening and churning are carried through in the most approved manner. Special attention is given to pasteurization and the use of starters. Every step of the work is performed by students and under the close supervision of competent instructors.

Cheese. Instruction is given in Cheddar cheese-making by an expert in the process. The cheese room in equipped with small vats and cheese is made in each the same as in large factory vats. All the work is performed by students and every step is carefully observed and reported by them on blank forms provided for the purpose.

Market Milk. The University operates a milk route and students are given practice in preparing and bottling milk and cream for retail trade. Quick and accurate methods for standardizing milk and cream are taught.

Dairy Mechanics. Each student is given one to three exercises per week in dairy mechanics and as often as possible these exercises are accompanied by a thorough drill in factory bookkeeping and common problems in arithmetic such as must be understood by everyone who is doing exact work in any branch of dairying. The Mechanics include the care and use of the boiler and engine, lacing belts, computing sizes of pulleys and speeds of shafts, pipe fitting, soldering, and a thorough study of the construction of different kinds of separators.

Certificates of Proficiency. Upon the successful completion of the short dairy course, a student may become an applicant for a certificate of proficiency under the following general terms and conditions :

"Persons who have passed one full term in attendance upon the Dairy-Course and have satisfactorily passed all of the examinations required of them, may become candidates for a Certificate of Proficiency in Dairy Industry.

"Such a candidate must spend one full season in work at an approved creamery, cheese factory, market milk plant or dairy. He must report regularly, upon blanks furnished for the purpose, such information in regard to his factory as may be required, and he must hold his factory in readiness for inspection at any time.

"Upon satisfactorily completing these requirements a certificate will be granted, though under certain conditions a longer period than a single season's work may be required."

Inquiries regarding the Dairy-Course should be addressed to Prof. PEARSON.

ADMISSION TO THE REGULAR OR FOUR YEARS' COURSE IN AGRICULTURE.

Admission to the College of Agriculture is on an equality with admission to other colleges of Cornell University. The general requirements for admission are practically those for admission to the College of Arts and Sciences. Admission is (1) by examination, (2) by certificate.

Candidates must be at least sixteen years of age, or if women seventeen. They must have certificates of good moral character, and students from other colleges or universities are required to furnish from those institutions certificates of honorable dismissal.

Candidates for admission deal with the office of the Registrar of the University. It is only after they are admitted that they come under the supervision and direction of the respective colleges. Candidates must file their credentials at the Registrar's office and obtain permits for examination. The results of the examinations may be ascertained from the Registrar.

Students from other colleges or universities may be admitted to advanced standing, on presenting to the University Registrar proper evidences of their work.

I. ADMISSION ON EXAMINATION.

The Entrance Examinations are held at Ithaca in September (in 1904, they begin Sept. 20). Students are also admitted on certificates, issued as the result of the examinations held in June by the College Entrance Examination Board of the Middle States and Maryland. For particulars as to these examinations, address Secretary of College Entrance Examination Board, Sub-station No. 84, New York City.

The time and conditions of the examinations held in Ithaca are as follows:

First Day.—English History, 9 A. M.; Plane Geometry, 3 P. M.

Second Day.—English, 9 A. M.; Elementary Algebra, 3 P. M.

Third Day.—Solid Geometry, Physics and Chemistry, 8 A. M.; Ancient History, 10:30 A. M.; Elementary and Advanced German and Greek, 3 P. M.

Fourth Day.—American History and Civil Government, 9 A. M.; Latin, Trigonometry, and Zoology, 3 P. M.

Fifth Day.—Elementary and Advanced French, 9 A. M.; Mediæval and Modern European History; Advanced Algebra, Botany, and Geology, 3 P. M.

Candidates for admission to the University, instead of passing the entire examination at one time, may present themselves in different years under the following conditions:

1 For the purposes of the division between two years the examinations in June given by the College Entrance Examination Board and those in September given by the University in the same year may count as one series, the applicant at his option, taking a part in June and a part in September.

2 Candidates are expected at their first presentation to take all the prescribed subjects of the primary entrance examinations before trying the advanced examinations.

3 No account will be taken of the result of such examinations (except in English) unless at least four subjects are satisfactorily passed.

Candidates intending to offer Greek at this preliminary examination may present themselves for examination in the Anabasis. Those intending to offer Latin may offer Cæsar, or either Virgil or Cicero.

Students deficient in any of the subjects required for admission, who may be admitted to the University by the Faculty in spite of such deficiencies, *must make up all deficiencies within one year*, and they will not in that case be permitted to remove them by attending University instruction in those subjects but are required to take the necessary instruction outside of the University.

The entrance examination is of two parts, (1) the primary examinations, and (2) the advanced examinations. The primary examinations are required for all

Colleges; the advanced examinations vary somewhat for the different Colleges or courses.

(1) THE PRIMARY ENTRANCE EXAMINATIONS.

In English. One hour of examination is assigned to answering questions upon the books marked *A*. Two more hours are occupied with writing longer papers upon subjects taken from the books marked *B*.

The books prescribed for 1903, 1904, and 1905 are: *A*, Shakespeare, The Merchant of Venice, Julius Cæsar; The Sir Roger de Coverley Papers in the Spectator; Goldsmith, The Vicar of Wakefield; Scott, Ivanhoe; Coleridge The Ancient Mariner; Carlyle, Essay on Burns: Tennyson, The Princess; Lowell, The Vision of Sir Launfal; George Eliot, Silas Marner. *B*, Shakespeare, Macbeth; Milton, Lycidas, Comus, L'Allegro, Il Penseroso; Burke, Conciliation with America; Macaulay, Essays on Milton and on Addison.

No candidate markedly deficient in English will be admitted to any course in the University.

Regents' credentials are not accepted in place of the entrance examination, unless they cover first year English, second year English, and *either* third year English or English Reading. School certificates are not accepted in place of the entrance examination in English. But candidates coming from schools the certificates of which have been accepted in other subjects may obtain exemption from the one-hour examination in books marked *A*, by submitting specimens of school work upon these books. Printed directions to this end should be procured from the Registrar, not later than the first of January.

In History, *one* of the four following subjects must be offered:

(1) Ancient history, with special reference to Greek and Roman History, and including also a short introductory study of the more ancient nations and the chief events of the early Middle Ages, down to the death of Charles the Great (814 A. D.).

(2) Mediæval and modern European history, from the death of Charles the Great to the present time.

(3) American history and civil government.

(4) English history.

Each of the above topics is intended to represent one year of historical work wherein the study is given five times per week, or two years of historical work wherein the study is given three times per week.

(The requirement in History is based on the recommendations of the Committee of Seven of the American Historical Association.)

In Mathematics.

Plane Geometry. Including the solution of simple original exercises, numerical problems and, questions on the metric system as much as is contained in the larger American and English text-books. The nature and scope of the work is shown in "McMahon's Plane Geometry."

Elementary Algebra. Factors, common divisors and mlutiples, fractions, equations of the first degree with one or more unknown quantities, involution including the binomial theorem for positive entire exponents, evolution, the doctrine of exponents, radicals and equations involving radicals, quadratics, equations of one or two unknown quantities and equtions solved like quadratics, ratio and proportion, and putting problems into equations; as much as is contained in the larger American and English text-books. The nature and scope of the work is shown in "Tanner's Elementary Algebra."

(2) ADVANCED EXAMINATION FOR ADMISSION TO THE COURSE LEADING TO THE DEGREE OF BACHELOR OF THE SCIENCE OF AGRICULTURE (WHICH IS THE SAME AS THAT LEADING TO THE DEGREE OF BACHELOR OF ARTS).

In addition to the primary entrance examinations, the applicant must offer either A, B, *or* C, *as below.*

A.

1 **In Greek:** Candidates are examined in the entrance requirements adopted by the College Entrance Examination Board. These are:

a i Greek Grammar.

ii Greek Prose Composition.

The examination in grammar and prose composition will be based on the first two books of Xenophon's *Anabasis.*

b Xenophon: The first four books of the *Anabasis.*

c Homer: The first three books of the *Iliad* (omitting II, 494–end).

2 **In Latin:** Candidates are examined in the entrance requirements adopted by the College Entrance Examination Board. These are:

a i Latin Grammar.

ii Latin Composition: Translation into Latin of detached sentences and very easy continuous prose based upon Cæsar and Cicero.

b Cæsar: Any four books of the *Gallic War*, preferably the first four.

c Cicero: Any six orations from the following list, but preferably the first six mentioned: The four orations against Catiline, Archias, the Manilian Law, Marcellus, Roscius, Milo, Sestius, Ligarius, the fourteenth Philippic.

d Virgil: The first six books of the *Æneid.*

B.

1 **In Latin** as above.

2 **In Advanced French or Advanced German:** *The examination in advanced French or in advanced German covers also an examination in the elementary requirement in each subject.* (The attention of teachers preparing students in French or German is called to the valuable report of the "Committee of Twelve" of the Modern Language Association of America, published by D. C. Heath & Co., Boston. Mailing price, sixteen cents.)

C.

1 **In Adanced French.**

2 **In Advanced German.**

3 **In Advanced Mathematics** as much as is contained in the standard American and English text-books on Solid Geometry, Advanced Algebra, and Plane and Spherical Trigonometry.

As an alternate requirement for advanced mathematics one of the following sciences, viz., Physics, Chemistry, Botany, Geology, or Zoology may be offered.

[For fuller information as to the details of the subjects, see explanations in the *University Register*.]

II. ADMISSION WITHOUT EXAMINATION.

(1) On Regents' Credentials.

Diplomas and sixty-count academic certificates issued by the Regents of the University of the State of New York are accepted in place of examinations in all the subjects required for entrance which are covered by such credentials, including upon the recommendation of the University departments concerned, the subjects of French, German, Physics, Chemistry, Botany, Geology, and Zoology. A statement from the teacher giving in detail the work done and the proficiency attained in these subjects, must be submitted by the holder of the credentials.

No other credentials, including pass cards and certificates, issued by the Regents' are accepted unless they are presented by the holder of a Regents' diploma or sixty-count academic certificate.

If a student fail in any subject in the University that depends upon an entrance subject, for which Regents' credentials have been accepted, the credits for that entrance subject may be cancelled.

To secure exemption from the entrance examinations in English, (see page 35 of the University Register) the Regents' diploma or sixty-count academic certificate must cover first year English, second year English, and *either* third year English or English Reading.

Application for credit in all subjects for which credit is desired must be made at the time of the admission of the applicant, and not be postponed to any later date in his course.

Diplomas, certificates, and statements should be sent by mail to the Registrar before the opening of the term.

(2) On School Certificates.

The following rules and regulations have been adopted by the University Faculty of Cornell University on the subject of admission by certificate:

1 Certificates of work done in public and private schools, in or out of the State, will not be accepted in lieu of examinations, unless the applicant has com-

pleted a full course in the school, and has been duly graduated after at least one year in the school, and the University authorities are satisfied regarding the standing of the school.

2 The application for the admission of a student by certificate must be made by the principal of a school and not by the candidate himself.

3 The application from the principal must be accompanied by full and specific information with regard to the completeness and thoroughness of the studies and course in which instruction is given. In case a catalogue or circular is published, a copy thereof should also be furnished.

4 Admission by certificate is in all cases provisional. If a student fail in any subject in the University that depends upon an entrance subject for which a certificate has been accepted, the credit for that entrance subject may be cancelled. Certificates from schools whose students prove to be imperfectly fitted will ultimately not be considered.

5 Subjects in which an examination has been passed for admission to the school, may be included in the certificate, but in all cases the full information called for by the blank should be given.

6 *No school certificate will be accepted in place of the entrance examination in English.*

7 The committee having charge of the acceptance of certificates may meet at any time during the collegiate year, but the certificates should be forwarded as soon after the graduation of the student as is possible, and at least as early as the first of September.

8 The University does not engage in advance to accept the certificates of any school, and the previous acceptance of such certificates merely raises the presumption that similar certificates may be accepted again, but does not establish a permanent right to such acceptance.

9 Application for credit in all subjects for which credit is desired, must be made at the time of the admission of the applicant, and not be postponed to any later date in his course.

All communications on this subject and all certificates must be addressed to the Registrar from whom also blank forms of certificates may be obtained.

REGISTRATION AND EXPENSES.

Registration Each Term.

At the beginning of every term each student must obtain a Certificate of Registration from the Registrar of the University, and no student, after having been once admitted to the University, will be allowed to register after the close of the Registration Day, except by special permission of the Faculty concerned.

Registration of Studies.

Students in all undergraduate courses register at the beginning of the collegiate year at the Registrar's office for the work of the entire year. No credit will be allowed for work not so registered. Changes in registration will not be allowed later than one week after Registration Day in the first term except by special permission of the Faculty concerned.

Expenses.

Tuition is free to regular and special students in the College of Agriculture, and also to winter-course students residing in New York State.

Winter-course students from outside the State pay a tuition for the term of 11 weeks of $25.00.

Fees are as follows :

Degrees : baccalaureate, paid at least ten days before Commencement	$5.00
advanced	10.00
Incidentals : post-graduates, half-year	7.50
regular students, 3d and 4th years, half-year	7.50
specials, half-year	7.50
general winter-course	5.00
general winter-course electing dairying (in addition)	5.00
winter dairy-course	15.00
winter poultry-course	7.50
(The fees for all winter-course students are in addition to the tuition required of non-residents.)	
Deposits, unused part returnable : winter dairy-course	4.00

Other deposit fees are required in various laboratory courses.

The expense of text-books, iustruments, etc., varies from $10 to $75 per annum.

The cost of living in Ithaca, including board, room, fuel, and lights, varies from $3.50 to $6 per week.

A fair estimate of the yearly expenses is from $300 to $500, but much depends on the personal tastes of the student.

The cost of board, rent of furnished room, fuel, and lights, in Sage College or Sage College Cottage, which are exclusively for women, varies from $5 to $6.50 a week. A student occupying alone one of the best rooms pays $6.50 a week. If two occupy such a room together, the price is $5.75. Those occupying less desirable rooms, with two in a room, pay $5 a week each. Both buildings are warmed by steam, lighted by electricity, and, in most cases, the sleeping apartment is separated from the study. The responsibility for the conduct of the students living in Sage College and the Cottage rests with the Warden of Sage College. Letters of inquiry in regard to board and rooms at the Sage College and the Cottage should be addressed to Mr. G. F. Foote, Business Manager of Sage College, Ithaca, N. Y.

Student Aids.

Various scholarships are provided, full explanation of which may be found in University Register.

There is a fellowship held between the Colleges of Agriculture and Veterinary Science.

State Grange Scholarships in Agriculture. At its 31st annual meeting, held at Cortland, February 4, 1904, the New York State Grange resolved to "appropriate annually $200 to be given to members of the Order in the form of four scholarships to any of the agricultural courses in Cornell University." The scholarships are each of a value of $50, to be awarded to two men and two women who attain the highest standing on competitive examination. The candidate should apply to the Master of the Pomona Grange in his home county, or to the Deputy in counties that have no Pomona.

The W. C. Hunt Prize for excellence in stock-judging. Mr. W. C. Hunt of Liverpool, N. Y., breeder of Holstein-Friesian cattle, offers to the student showing the greatest proficiency in judging dairy cows a prize of $10.00 and to the second best student a prize of $5.00. The competition is open to any member of the classes in Animal Husbandry in the year 1904–5 and the competition is to take place at the stables of the owner some time between March 15th and April 1st, 1905.

There is a limited amount of work on the farms, that will be given to students that apply for it. Those desiring work should write early to Professor T. F. Hunt, who will furnish application blanks.

Requests for information respecting the College of Agriculture should be addressed to

L. H. BAILEY, Director,
Ithaca, N. Y.

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CORNELL UNIVERSITY

DEPARTMENTS AND COLLEGES

GRADUATE DEPARTMENT
Degrees, A.M., Ph.D., etc.

COLLEGE OF ARTS AND SCIENCES
Degree, A.B.

COLLEGE OF LAW
Degree, LL.B.

MEDICAL COLLEGE
Degree, M.D. New York City and Ithaca

NEW YORK STATE VETERINARY COLLEGE
Degree, D.V.M.

COLLEGE OF AGRICULTURE
Degree, B.S.A.

COLLEGE OF ARCHITECTURE
Degree, B.Arch.

COLLEGE OF CIVIL ENGINEERING
Degree, C.E.

SIBLEY COLLEGE OF MECHANICAL ENGINEERING AND MECHANIC ARTS
Degree, M.E.